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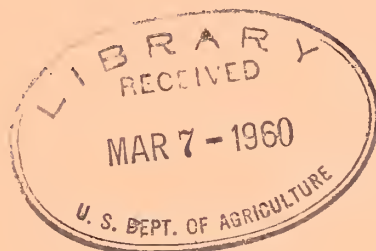
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TECHNICAL EQUIPMENT REPORT NO. F-6  
AUGUST 1959

# MANUAL RELEASE FOR HELITANKS

*by*

MISSOULA EQUIPMENT DEVELOPMENT CENTER  
FOREST SERVICE, U. S. DEPARTMENT OF AGRICULTURE  
MISSOULA, MONTANA



FOREST SERVICE  
U. S. DEPARTMENT OF AGRICULTURE  
WASHINGTON, D. C.



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MANUAL RELEASE FOR HELITANKS

Missoula Equipment Development Center  
U. S. Department of Agriculture  
Forest Service  
Missoula, Montana

August 1959

In conjunction with the Selway-Bitterroot Primitive Area Helicopter Study, the Missoula Equipment Development Center has completed tests on a manual release for rubberized fabric helitanks.

The helitank developed by the Arcadia Equipment Development Center uses an electric sling release to discharge the load. The manual release is designed to operate on any helicopter equipped with bomb-shackle system. Due to the difference in fuselage clearance and skid landing-gear dimensions of various helicopters, adjustable risers were used.

Region 1 pilots prefer to jettison the empty tank each time prior to landing. Repeated dropping of the electrical release mechanism is likely to result in damage to the solenoid unit. A manual release mechanism with quick-release snap hook was found to be much more durable, and weighs  $2\frac{1}{2}$  pounds less.

V-rings welded to a 13-3/4-inch metal spreader form a riser adapter that can be placed into an electrically operated bomb shackle with one hand.

Two nylon webbing risers sewed to the rings of this adapter, are connected to the helitank harness by separable links.

A 32-inch length of cable housing is sewn to one riser so that approximately 2 inches of the lower end passes through a 3/4-inch japanned iron ring inserted in the separable link. The ring serves as a guide and fulcrum point for the housing and trip cable.

A V-ring is sewed to the opposite riser at a point 14 inches above the separable link. A snap hook quick-release device is snapped into this ring.

Three metal end tabs sewn to the drop sleeve are latched into the release device.

A length of 1/16-inch aircraft cable secured to the release lever of the quick-release snap passes through the cable housing on the opposite riser and into the rip-cord handle. This rip-cord handle is placed in a snug leather holster. The holster is strapped to the rear leg of the pilot's seat within easy reach. The cable length allows slack enough so the pilot can hold the rip-cord handle while approaching the drop target and still operate collective control and throttle. The holster is designed to release the rip-cord handle when the helitank is jettisoned.

The helitank is used with the helicopter door removed on helicopters not having a removable floor section.

The helitank will be one of the standard accessories for use during the Selway-Bitterroot Primitive Area Helicopter Study.

Drawings and list of materials follow.

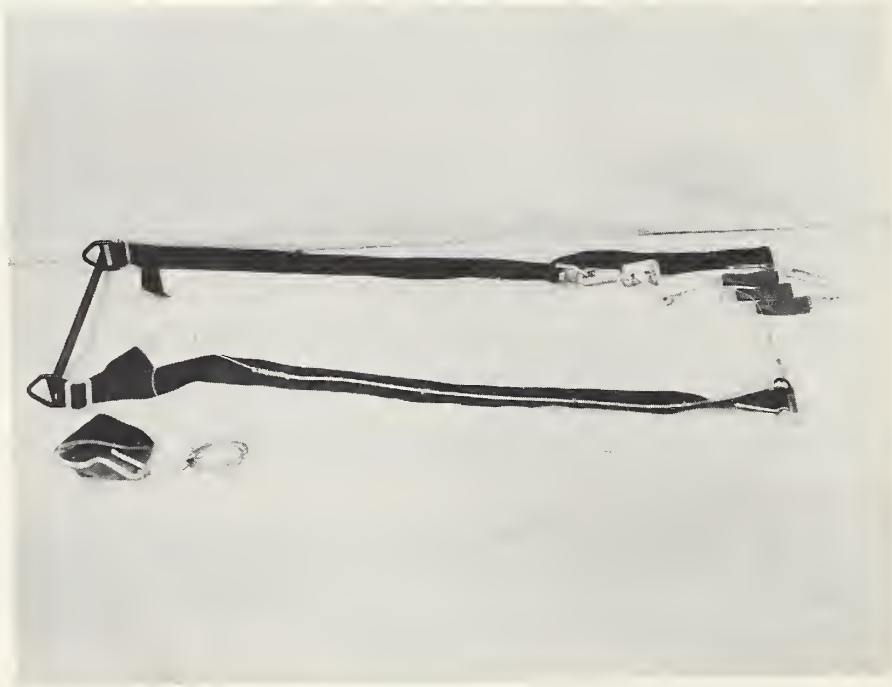


Figure 1. Manual release sling for helitank.

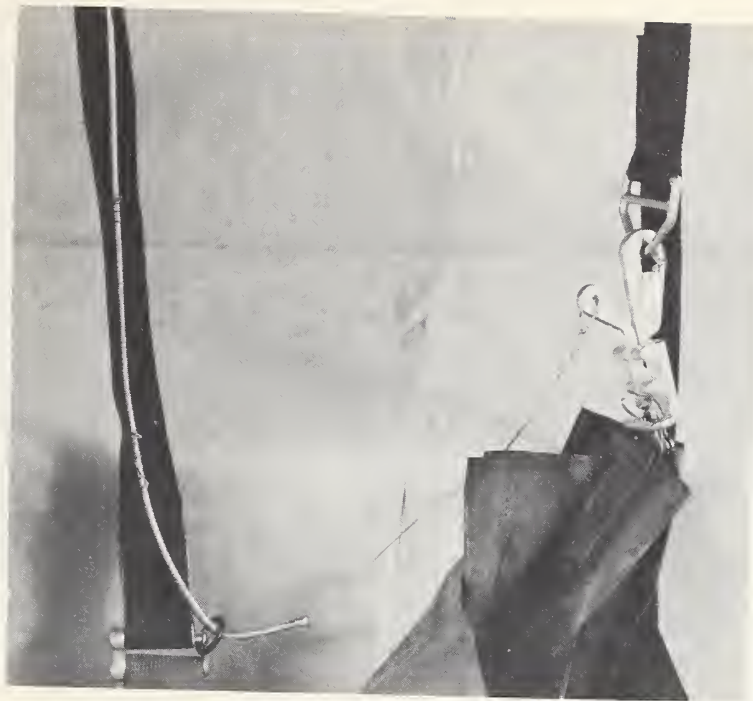


Figure 2. Quick-release snap hook with metal tabs on drop sleeve locked in position ready to fill.



Figure 3. Filling helitank.



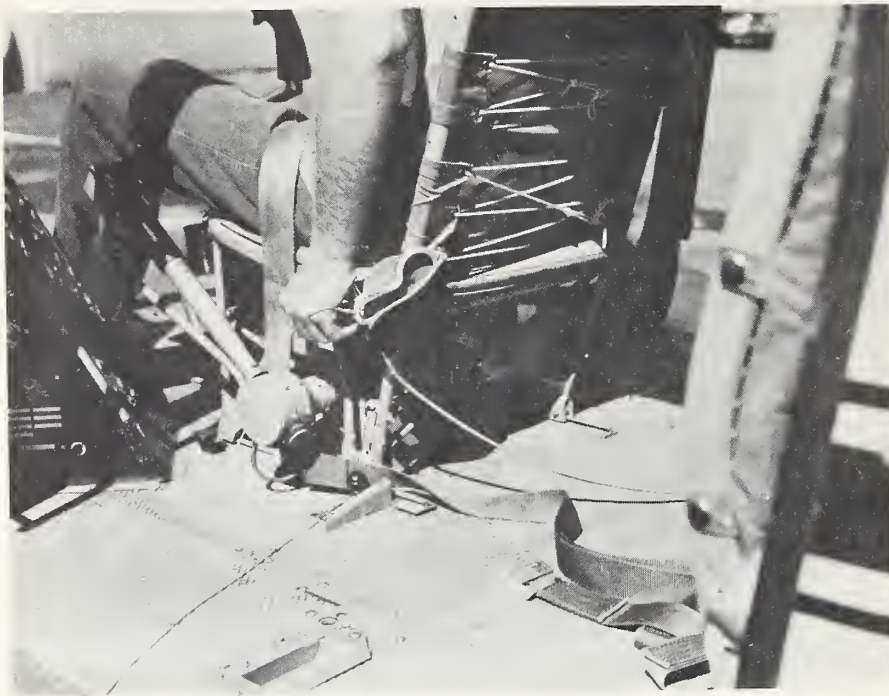


Figure 4. Holster and rip-cord handle in place.



Figure 5. Full helitank in flight.

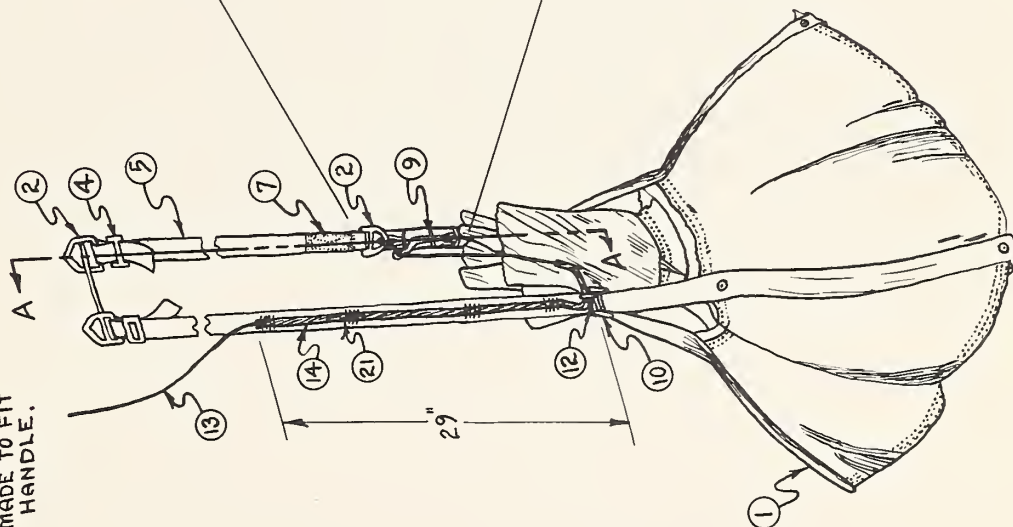
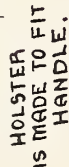
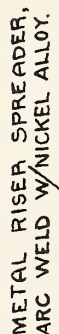
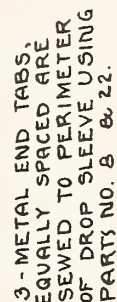
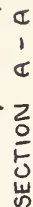


## MATERIALS LIST

Name	Material	Part No.		Quantity	Color	Size	Specification	
		No.	Req.				or Number	Type
Helitank		1	1-Unit					
"v" rings	Metal	2	3			1-3/4"	AN 6563-1	
Spreader	Steel	3	1	13-3/4"		1" x 1/8"		
Adapters	Metal	4	2			1-3/4"	AN 6565-1	
Risers, webbing	Nylon	5	2	50"		1-3/4"	MIL 4088, Condition R 1800# Min. strength	VI, VII, VIII or XIII
Filler, webbing	Cotton	6	2	5"		1-3/4"	MIL 5665a	XII
Webbing	Nylon	7	1	8"		1-3/4"	MIL 4088, Condition R 1800# Min. strength	VI, VII, VIII or XIII
Webbing	Nylon	8	3	8"		1"	MIL-W-4088 B	II
Snap hook quick release device	Metal	9	1-Unit			1-3/4"	MIL-H-10050 A	Type 6 Symbol "A"
Links, separable	Metal	10	2			2"	50B6869	
Fastener, parachute pack	Metal	11	3			1-1/16"	AN 6561-1	
Ring, housing guide	Metal	12	1		Black Japanned	3/4"		
Cable, aircraft	Steel	13	1	12'6"		1/16"		

# MATERIALS LIST

Name	Material	Part No.	No. Req.	Quantity	Color	Size	Specification or Number	Type
Housing, cable	Metal	14	1	32"		1/4"		Choker
Handle, rip cord	Metal	15	1				AN 6567-1	
Holster	Leather	16	1			As Spec.		Sole leather
Sleeve	Metal	17	2					
Buckle, leather	Metal	18	1		Black Japanned	1/2"		
Strap	Leather	19	1	12"		1/2"		
Rivets, leather	Metal	20	4			3/16" x 1/2" long		
Thread	Waxed cotton	21				5-cord		
Thread	Cotton	22				16/4 cord	V-T-276-B ticket #16	Machine glazed



# ASSEMBLY DRAWING

DATE	REVISION	BY
U. S. DEPARTMENT OF AGRICULTURE FOREST SERVICE		
MISSOULA EQUIPMENT DEVELOPMENT CENTER		
MANUAL RELEASE SLING FOR HAROIKES HELITANK		
DESIGNED APPROVED DATE	C.A.P. D.G.T. W.C.W. As Spec	DRAWING NUMBER ED-184-RI SHEET NO.





